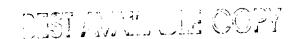
Appl. No. 09/909,001 Amendment dated December 19, 2003 Reply to Office Action of June 19, 2003



Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

We claim:

- 1. (currently amended) A method of isolating one strand of a double-stranded target nucleic acid, comprising: (i) contacting a double-stranded target nucleic acid comprising a first strand and a second strand with a competitor oligo capable of hybridizing to the first strand under conditions in which the first strand dissociates from the second strand and hybridizes with the competitor oligo to form a first-strand:competitor oligo heterduplex; and (ii) isolating the heteroduplex or the dissociated second strand.
- 2. (currently amended) A method of isolating one strand of a double-stranded target nucleic acid, comprising: (i) contacting a double-stranded target nucleic acid comprising a first strand and a second strand with a competitor oligo capable of hybridizing to the first strand under conditions in which the first strand dissociates from the second strand and hybridizes with the competitor oligo to form a first-strand:competitor oligo heterduplex; and (ii) isolating the heteroduplex or the dissociated second strand., and (iii) dissociating the heteroduplix and isolating the first strand.
 - 3. (cancelled)
 - 4. (cancelled)
 - 5. (cancelled)
 - 6. (currently amended) The method of claim 1 or 2 or 27 or 28 in which the double-

stranded target nucleic acid is a double-stranded DNA. ISI AND STORY

- 7. (currently amended) The method of claim 1 or 2 or 27 or 28 in which the double-stranded target nucleic acid is a double-stranded DNA/RNA hybrid duplex.
- 8. (currently amended) The method of claim 1 or 2 or 27 or 28 in which the competitor oligo is composed of between 7 and 40 nucleobases.
- 9. (currently amended) The method of claim 1 or 2 or 27 or 28 in which the double-stranded target nucleic acid has the formula:
- TAIL 1-SEQUENCE-TAIL 2 TAIL 1'-SEQUENCE'-TAIL 2' wherein: TAIL 1 represents a first tail nucleobase sequence; SEQUENCE represents a target nucleobase sequence; TAIL 2 represents a second tail nucleobase sequence; TAIL 1' represents a nucleobase sequence that is complementary to TAIL 1; SEQUENCE' represents a nucleobase sequence that is complementary to SEQUENCE; and TAIL 2' represents a nucleobase sequence that is complementary to TAIL 2.
- 10. (original) The method of claim 9 in which a portion of the competitor oligo is capable of hybridizing to TAIL 1 and another portion of the competitor oligo is capable of hybridizing to TAIL 2.
- 11. (original) The method of claim 9 in which a portion of the competitor oligo is capable of hybridizing to TAIL 1' and another portion of the competitor oligo is capable of hybridizing to TAIL 2'.
- 12. (original) The method of claim 9 in which TAIL 1 and TAIL 2 comprise non-standard synthetic nucleobases.
- 13. (original) The method of claim 9 in which TAIL 1 and TAIL 2 are not complementary to one another.

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- 14. (currently amended) The method of claim 1 or 2 or 27 or 28, in which the competitor oligo includes a capture moiety.
- 15. (original) The method of claim 14, in which the capture moiety is one member of a pair of molecules that specifically bind to each other.
 - 16. (original) The method of claim 14, in which the capture moiety is biotin.
 - 17. (currently amended) The method of 14, in which the <u>capture</u> moiety is a solid support.
 - 18. (original) The method of claim 17, in which the solid support is magnetic.
 - 19. (original) The method of claim 14 in which the capture moiety is a capture sequence.
- 20. (currently amended) The method of claim 16 14 in which the capture moiety is a charged group.
- 21. (currently amended) The method of claim 1 or 2 or 27 or 28 in which the competitor oligo is capable of hybridizing to only the first or the second strand of the double-stranded target nucleic acid.
- 22. (currently amended) The method of claim 1 or 2 or 27 or 28 in which the contacting step is carried out at a cationic strength in the range of 0 to 10 mM, a pH in the range of 6 to 8, and a temperature in the range of 20 to 40° C.
- 23. (currently amended) The method of claim 1 or 2 or 27 or 28 in which the competitor oligo is a PNA and optionally includes from 1 to 4 positively charged nucleobase interlinkages.
- **24**. (currently amended) The method of claim 1 or 2 or 27 or 28 in which the competitor oligo comprises nonstandard synthetic nucleobases.

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25. (currently amended) A method of isolating one strand of a double-stranded target nucleic acid, comprising the steps of: (i) dissociating the double-stranded target nucleic acid into a first strand and a second strand; (ii) contacting the dissociated target nucleic acid with a competitor oligo capable of hybridizing to only the first strand under conditions which kinetically favor competitor oligo first-strand hybrid formation and kinetically disfavor reannealing of the first and second strands, said competitor oligo being conjugated with a moiety that facilitates capture of competitor oligo:first-strand hybrids; and (iii) capturing the competitor oligo:first strand hybrid, and (iv) dissociating the heteroduplex and isolating the first strand.

26. (original) The method of claim 25 wherein the competitor oligo is a PNA.

27. (new) A method of isolating one strand of a double-stranded target nucleic acid, comprising: (i) dissociating the double-stranded target nucleic acid into a first strand and a second strand; (ii) contacting the dissociated target nucleic acid with a competitor oligo capable of hybridizing to the first strand under conditions which favor first-strand:competitor oligo heteroduplex formation and disfavor reannealing of the first and second strands; and (iii) isolating the dissociated second strand.

28. (new) A method of isolating one strand of a double-stranded target nucleic acid, comprising: (i) dissociating the double-stranded target nucleic acid into a first strand and a second strand; (ii) contacting the dissociated target nucleic acid with a competitor oligo capable of hybridizing to the first strand under conditions which favor first-strand:competitor oligo heteroduplex formation and disfavor reannealing of the first and second strands; (iii) isolating the heteroduplex, and (iv) dissociating the heteroduplex and isolating the first strand.

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